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Spatial and temporal landscape change of Andaman coastal city and forest, Thailand

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The Andaman coast has a narrow continental shelf, deepens offshore and some shallower profile with a combination of mangrove forests, mudflats and sandy beaches. Tropical mangrove forests and coastal ecosystems are main supplementary sources for foods and income for subsistent communities with more than 400 local villages where people make their living from fishery and agriculture. The coast is considered valuable resources and play key roles in the functioning of ecosystems and human settlements. Six cities along the Andaman coast developed from maritime commercial and tin mine community a century ago. Though, after the replacement of modern material and environmental movement, landscape pattern of Andaman coastal zone has undergone a significant change. The rapid growth in nature based tourism of the coast started for the past 20 years, resulted in extensive change of coastal land cover. Change in land use induced by demand to serve expansion of tourism industry and urbanization are among the main pressure of mangrove shrinkage and fragmentation of ecological patch which result in degradation of coastal ecosystem. The methods engaged in this study include interpretation and analysis of aerial photographs, satellite images and geographic information system (GIS) data. Remote sensing has been used to extract the information related to urban growth, built up area and its spatial and temporal variation. Build up area is interpreted using supervised classification approach to find out the temporal and spatial changes in coastal area of Andaman between 1995, 2005, and 2015. The study of land use pattern is used as tools to investigate structure and dynamic of the coastal ecosystem by using landscape metrics, algorithms that quantify specific spatial characteristics of landscape patterns. The outcome of the study aims to identify coastal landscape structure and change of coastal city and mangrove area to state the current status of Andaman coastal ecosystem.

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